**Listing of Claims:**

This listing of claims reflects all claim amendments and replaces all prior versions, and listings, of claims in the application (material to be inserted in amended claims is in **bold and underline**, and material to be deleted is in [~~brackets and strikeout~~]). In brief, pending claims 1, 3, 5-8, 17, 18, and 21-25 have been amended, and new claims 27 and 28 have been added, relative to applicants' previous amendment (dated January 13, 2003).

1. (Currently Amended) A method of performing optical analysis on a **plurality of** compositions, comprising:

positioning the **plurality of** compositions **automatically** at an examination site in a multi-mode instrument**, the compositions being disposed in a two-dimensional array**;

detecting light transmitted from the compositions using the multi-mode instrument in a first optical measurement mode;

detecting light transmitted from **one or more of** the compositions using the multi-mode instrument in a second optical measurement mode, where the second mode is different than the first mode; and

computing a first quantity related to a property of **at least one of** the compositions using the light detected in at least one of the optical measurement modes.

2. (Original) The method of claim 1, where the multi-mode instrument is capable of detecting light in at least two optical measurement modes selected from the group consisting of absorption, luminescence, and scattering.

3. (Currently Amended) The method of claim 1, where the steps of detecting light using the first and second optical modes are performed sequentially **on at l ast one of the one or more compositions**.

4. (Original) The method of claim 3, further comprising automatically switching the multi-mode instrument from the first optical measurement mode to the second optical measurement mode.

5. (Currently Amended) The method of claim 1, where the steps of detecting light using the first and second optical modes are performed simultaneously **on at least one of the one or more compositions**.

6. (Currently Amended) The method of claim 1, where [~~one or both of~~] the step[s] of detecting light using the first [~~and second~~] mode[~~s are~~] **is** performed simultaneously on [~~a~~] **the** plurality of compositions for optical analysis of the plurality of compositions.

7. (Currently Amended) The method of claim 1, where [~~one or both of~~] the step[s] of detecting light using the first [~~and second~~] mode[~~s are~~] **is** performed successively on [~~a~~] **the** plurality of compositions for optical analysis of the plurality of compositions.

8. (Currently Amended) The method of claim 1, where [~~the step of detecting light using the first mode is performed successively on a plurality of compositions for optical analysis of the plurality of compositions, and then~~] the step of detecting light using the second mode is performed **after the step of detecting light using the first mode** [~~on some or all of the plurality of compositions~~].

9. (Original) The method of claim 1, the first quantity being computed using the light detected in the first optical measurement mode, further comprising:

computing a second quantity using the light detected in the second optical measurement mode; and

assessing the presence or effects of a potential source of error on the first quantity using the second quantity.

10. (Original) The method of claim 9, where the first optical measurement mode is luminescence, and where the second optical measurement mode is selected from the group consisting of absorption and scattering.

11. (Original) The method of claim 1, where the first optical measurement mode is luminescence.

12. (Original) The method of claim 11, where the second optical measurement mode is scattering.

13. (Original) The method of claim 12, further comprising assessing the presence or effects of turbidity on the first quantity using the light detected in the second optical measurement mode.

14. (Original) The method of claim 11, where the second optical measurement mode is absorption.

15. (Original) The method of claim 14, further comprising assessing the presence or effects of color quenching and/or a contaminant on the first quantity using the light detected in the second optical measurement mode.

16. (Original) The method of claim 1, where the first quantity is selected from the group consisting of absorbance, chemiluminescence intensity, photoluminescence intensity, photoluminescence energy transfer, photoluminescence lifetime, and photoluminescence polarization.

17. (Currently Amended) The method of claim 1, where the property of the **at least one** composition is the presence or activity of a component of the **at least one** composition.

18. (Currently Amended) The method of claim 1, further comprising detecting light transmitted from **at least one of** the compositions using the multi-mode instrument in a third optical measurement mode, where the third mode is different than the first and second modes.

19. (Original) The method of claim 1, further comprising determining to perform the step of detecting light using the second mode based on an outcome of the step of detecting light using the first mode.

20. (Original) The method of claim 1, further comprising repeating the step of detecting light using the first mode based on an outcome of the step of detecting light using the second mode.

21. (Currently Amended) A method of performing optical analysis on a **plurality of** compositions, comprising:

positioning the **plurality of** compositions **automatically** at an examination site in a multi-mode instrument**, the compositions being disposed in a two-dimensional array**;

detecting light transmitted from the compositions using the multi-mode instrument in a first optical measurement mode;

computing a first quantity related to a property of **one or more of** the compositions using the light detected in the first optical measurement mode;

comparing the quantity to a preselectable criterion; and

if the quantity matches the preselectable criterion, detecting light transmitted from the **one or more** compositions using the multi-mode instrument in a second optical measurement mode, where the second mode is different than the first mode.

22. (Currently Amended) The method of claim 21, where the preselectable criterion is a set of acceptable values for the first quantity, so that light transmitted from the **one or more** compositions is detected using the second mode if the first quantity is an acceptable value.

23. (Currently Amended) The method of claim 21, where the preselectable criterion is a set of unacceptable values for the first quantity, so that light transmitted from the **one or more** compositions is detected using the second mode if the first quantity is an unacceptable value.

24. (Currently Amended) The method of claim 21, further comprising:

computing a second quantity related to a property of the **one or mor** compositions using the light detected in the second optical measurement mode; and

assessing the presence or effects of a potential source of error on the first quantity using the second quantity.

25. (Currently Amended) A system for performing optical analysis on a **plurality of** compositions, comprising:

a multi-mode instrument [~~that is capable of detecting~~] **configured to detect** light **automatically** from [~~a~~] **the plurality** of compositions in **a** first [~~and second~~] optical measurement mode[~~s~~] **and from one or more of the compositions in a second optical measurement mode**, where the first mode is different than the second mode, **and where the plurality of compositions are disposed in a two-dimensional array**; and

a processor that uses measurements from more than one optical measurement mode to compute a quantity relating to a characteristic of the **one or more** compositions.

26. (Original) The system of claim 25, where the multi-mode instrument includes a light source, a detector, an examination site, and an optical relay structure positioned to transmit light from the light source to a composition at the examination site, and from the composition to the detector.

27. (New) The method of claim 1, where the two-dimensional array is defined by a microplate.

28. (New) The method of claim 1, where the two-dimensional array is defined by a biochip.